Amendments to the Claims:

This listing of claims will replace all prior versions and listing of claims in the application.

Please cancel claims 1-5 without prejudice or disclaimer.

Please add new claims 10-31 as follows:

Claims 1-9 (cancelled)

10. (new) An isolated protein with an apparent molecular weight of about 24 kDa and an isoelectric point of about less than 4.5, comprising an N-terminal amino acid sequence which displays at least 90 percent amino acid sequence identity with SEQ ID NO: 1, wherein the protein displays substantial ice recrystallization inhibitory activity.

11. (new) The isolated protein of claim 10 wherein the N-terminal sequence displays at least 95 percent sequence identity to SEQ ID NO: 1.

12. (new) The isolated protein of claim 10 wherein the N-terminal sequence displays at least 99 percent sequence identity to SEQ ID NO: 1.

13. (new) The isolated protein of claim 10 wherein the N-terminal sequence contains one or more conservative amino acid substitutions.

14. (new) The isolated protein of claim 10 wherein the N-terminal amino acid sequence comprises SEQ ID NO: 1.

15. (new) The isolated protein of claim 10 wherein the N-terminal amino acid sequence comprises SEQ ID NO: 2.

16. (new) The isolated protein of claim 10 wherein the protein is glycosylated.

17. (new) The isolated protein of claim 10 wherein 0.01 percent of the protein present in a 30 percent sucrose solution cooled to minus 80°C and then heated to minus 6°C yields an increase in ice cystal size of less than 20 percent when the solution is kept at minus 6°C for 30 minutes.

18. (new) An isolated protein produced by the method of:

(a) preparing a solution extract of *Umbilicaria antarctica*,

(b) isolating a fraction of the solution extract that displays substantial ice recrystallization inhibitory activity,

(c) isolating a sample of proteins with an apparent molecular weight of about 24 kDa and an isoelectric point of less than 4.5 from said fraction of solution extract, and

(d) isolating a protein with an N-terminal amino acid sequence which displays at least 90 percent sequence identity to SEQ ID NO: 1 from said sample of proteins.

19. (new) The isolated protein of claim 18 wherein the N-terminal sequence displays at least 95 percent sequence identity to SEQ ID NO: 1.

20. (new) The isolated protein of claim 18 wherein the N-terminal sequence displays at least 99 percent sequence identity to SEQ ID NO: 1.

21. (new) The isolated protein of claim 18 wherein the N-terminal amino acid sequence comprises SEQ ID NO: 1.

22. (new) The isolated protein of claim 18 wherein the N-terminal amino acid sequence comprises SEQ ID NO: 2.

23. (new) The isolated protein of claim 18 wherein the protein is glycosylated.

24. (new) The isolated protein of claim 18 wherein 0.01 percent of the protein present in a 30 percent sucrose solution cooled to minus 80°C and then heated to minus 6°C yields an increase in ice cystal size of less than 20 percent when the solution is kept at minus 6°C for 30 minutes.

25. (new) The isolated protein of claim 18 wherein the fraction of the solution extract that displays substantial ice recrystallization inhibitory activity is isolated by column chromatography.

26. (new) The isolated protein of claim 18 wherein the sample of proteins with an apparent molecular weight of about 24 kDa is isolated by gel electrophoresis.

27. (new) The isolated protein of claim 18 wherein the sample of proteins with an isoelectric point of about less than about 4.5 is isolated by isoelectric focusing.

28. (new) An isolated protein with an apparent molecular weight of about 24 kDa and an isoelectric point of about less than 4.5, comprising an N-terminal amino acid sequence comprising SEQ ID NO: 1, wherein the protein displays substantial ice recrystallization inhibitory activity.

29. (new) An isolated protein with an apparent molecular weight of about 24 kDa and an isoelectric point of about less than 4.5, comprising an N-terminal amino acid sequence comprising SEQ ID NO: 2, wherein the protein displays substantial ice recrystallization inhibitory activity.

30. (new) A composition comprising the isolated protein of any one of claims 10, 18, 28 or 29.

31. (new) The composition of claim 30 wherein the amount of isolated protein in the sample is about 0.00001 to about 0.5 percent weight.